

**STRATIGRAPHIC NOMENCLATURE
RECOMMENDED FOR USE BY THE
MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI GEOLOGICAL SURVEY**

by
David L. Bridges (Phanerozoic strata)
Patrick S. Mulvany (Phanerozoic strata and Introduction)
Lisa M. Lori (Proterozoic rocks)

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MISSOURI GEOLOGICAL SURVEY
Joe Gillman, Director and State Geologist

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INTRODUCTION — 2019 Update of Information Circular 31

The chrono-lithostratigraphy of Missouri has changed considerably since the Missouri Geological Survey published Information Circular 31 in 1993. The purpose of this update is to capture all the changes while assuring compliance with the *North American Stratigraphic Code* set by the North American Commission on Stratigraphic Nomenclature (1983). The formulae for *Code*-compliant stratigraphic names and examples of them are shown below. It should be noted that the Missouri Geological Survey's past use of quotation marks for flagging informally named and unnamed units has been abandoned.

Formal Unit Names — (*Code* specifies all words begin with upper case letter)

Position + Geographic Place Name + Lithology + Rank Term

Cambrian System, Mississippian Subsystem, Middle Pennsylvanian Series, Missourian Stage, Lower Warsaw Formation, Liberty Memorial Shale, St. Peter Sandstone, Chouteau Limestone, Sullivan Siltstone Member, Kansas City Group, Bronson Subgroup, Quarry Ledge (important marker bed recognized for over 100 years and worthy of formal status)

Informal Unit Names — (*Code* specifies only words in geographic place name begin with upper case letter)

position + Geographic Place Name + position + lithology + rank term

upper Cambrian series, Riverton lower coal bed, Farlington limestone bed, Farley upper limestone facies, Flint Hill sandstone facies, Squirrel sandstone, Chariton conglomerate

Unnamed Unit Names — (not specified in *Code* and adopted by Missouri Geological Survey)

the word "unnamed" + position + lithology + rank term

unnamed formation, unnamed shale, unnamed shale member, unnamed middle limestone facies

In the chronological and alphabetical listings of stratigraphic units contained herein, chronostratigraphic units appear in bold Times New Roman typeface (e.g., **Pennsylvanian Subsystem**), whereas lithostratigraphic units appear in plain Arial typeface (e.g., Dennis Formation). Both global and North American names have been employed for chronostratigraphic units.

Advances in conodont biostratigraphy have made it possible in many cases to recognize coevality of Paleozoic lithostratigraphic units having different names and occurring at different geographic locations in the state. Therefore, a line entry in the chronostratigraphic listing may contain more than one lithostratigraphic unit, indicating that all the units appearing in the line were deposited contemporaneously during an unspecified interval of time represented by the line. For example, line 4 on page 10 states, "Reeds Spring Fm., Bentonville Fm., Lower Warsaw Ls.," indicating that the three units were deposited at the same time, though in different parts of the state. This organizational strategy embodies both the *Law of Superposition* and *Walther's Law*. So as not to encumber a clean portrayal of the step-by-step march of geologic time, no attempt has been made to indicate geographic locations of the lithostratigraphic units. That information is contained in the reference literature.

For one exception—the McLouth Formation—the lithostratigraphic units listed occur in outcrop and are not confined to the subsurface. Names for Cambrian units confined to the subsurface are in Mulvany and Thompson (2013).

The names of Proterozoic crystalline basement rock units that serve as the foundation for the Phanerozoic stratigraphic succession are included, though they are not listed in chronological order.

INTRODUCTION — 1993 Original Information Circular 31

In October, 1965, a Stratigraphic Names Committee was appointed by the State Geologist to recommend stratigraphic nomenclature and classification to be used by the Missouri Geological Survey. The first action of this committee was to recommend adoption of the Code of Stratigraphic Nomenclature of the American Commission on Stratigraphic Nomenclature (AAPG Bulletin, 1961, v.45, n. 5, p. 645-655). Shortly after adoption of the Code, the committee, with the help of other Survey staff members, prepared a list of formal names of rock-stratigraphic units in Missouri to be used in Survey manuscripts and publications. This list serves as a standard for uniform nomenclature usage by Survey staff members and has been recommended for use by agencies and individuals who rely on the Survey to provide such information.

In 1984 the Geological Survey, Missouri Department of Natural Resources, adopted the *North American Stratigraphic Code* (AAPG Bulletin, 1983, v. 67, n. 5, p. 841-875), which allowed some changes in the original concepts of formal stratigraphic nomenclature. Generally, a single formal name is recommended for each rock-stratigraphic unit. The name selected for a specific unit is based on knowledge of subsurface and surface characteristics of that unit throughout the state. The formal name of a formation that consists predominantly, but not necessarily entirely, of a single lithology comprises a geographic name followed by that of the predominant lithology. An example is the **Burlington Limestone**, which, as the name implies, is predominantly limestone, although it usually contains varying amounts of chert and locally may contain a high percentage of dolomite. If a formation has no single predominant lithology, its formal name consists of a geographic name followed by the word "Formation." An example is **Roubidoux Formation**. The first letter of each element of a formal name is capitalized. If the unit is not formally recognized, but is used as a marker bed within a formation, the name is usually placed within quotation marks ("Swan Creek sandstone" of the Cotter Dolomite; "Quarry Ledge" of the Jefferson City Dolomite).

Rock-stratigraphic units of member rank are similarly named. If a member has a single predominant lithology the appropriate lithologic term is included between the geographic name and the word "Member." An example is the **Myrick Station Limestone Member of the Pawnee Formation**. Several units have been defined as a series of formations that constitute a **group**, with designations like the **Macy Limestone of the Plattin Group**. Although referred to as a group in detailed studies, the Plattin can be called the **Plattin Limestone** if a more regional, less detailed definition for the unit is desired, and the subdivisions are not used.

Facies and coal beds are usually not given formal recognition, although the newest code does allow coal beds to be recognized formally if desired, or required by the nature of the study. Examples of currently accepted informal usages are **Tebo coal**, and **Cooper limestone facies of the Cedar Valley Limestone**.

One of the functions of the Stratigraphic Committee is to recommend changes in stratigraphic nomenclature to the State Geologist. Proposals for such changes must be submitted to the committee by Survey geologists and are subject to final approval by the State Geologist.

1993 Stratigraphic Committee: Tom Thompson, Chairman; Jim Palmer; Mark Middendorf; Dave Smith; Bruce Netzler; Don Miller; and Jim Martin.

CHRONOLOGICAL LISTING OF NOMENCLATURE

Phanerozoic Eonothem

Cenozoic Erathem

Quaternary System

Holocene Series

Alluvium

Pleistocene Series

Upper Pleistocene Stage, Wisconsin Stage

Peoria Loess

Roxana Silt

Middle Pleistocene Stage, Illinoian Stage

Loveland Silt

Middle Pleistocene Stage, Pre-Illinoian Stage

McCredie Formation

Crowley's Ridge Silt, Macon Member

Columbia Member

Fulton Member

Lower Pleistocene Stage, Pre-Illinoian Stage

Moberly Formation

Atlanta Formation

Neogene System

Pliocene (?) Series

Mounds Gravel

Paleogene System

Eocene Series

Wilcox Group

Holly Springs Formation

Ackerman Formation

Paleocene Series

Midway Group

Porters Creek Clay

Clayton Formation

Mesozoic Erathem

Cretaceous System

Upper Cretaceous Series

Maastrichtian Stage

Owl Creek Formation

McNairy Formation

Campanian Stage

Coffee Sand

Post Creek Formation

Little Bear Formation

Paleozoic Erathem

Carboniferous System

Pennsylvanian Subsystem
Upper Pennsylvanian Series
Gzhelian Stage, Virgilian Stage

- Indian Cave Sandstone
- Wabaunsee Group
 - Richardson Subgroup
 - Stotler Formation
 - Grandhaven Member (?)
 - Dry Shale Member
 - Dover Limestone Member
 - Pillsbury Shale
 - Zeandale Formation
 - Maple Hill Limestone Member
 - Wamego Shale Member
 - Nyman coal bed
 - Tarkio Limestone Member
 - Nemaha Subgroup
 - Willard Shale
 - Emporia Formation
 - Elmont Limestone Member
 - Harveyville Shale Member
 - Reading Limestone Member
 - Auburn Shale
 - Bern Formation
 - Wakarusa Limestone Member
 - Soldier Creek Shale Member
 - Burlingame Limestone Member
 - Sacfox Subgroup
 - Scranton Formation
 - Silver Lake Shale Member
 - Rulo Limestone Member
 - Cedar Vale Shale Member
 - Elmo coal bed
 - Happy Hollow Limestone Member
 - White Cloud Shale Member
 - Howard Formation
 - Utopia Limestone Member
 - Winzeler Shale Member
 - Church Limestone Member
 - Aarde Shale Member
 - Nodaway coal bed
 - Severy Shale
 - Shawnee Group
 - Topeka Formation
 - Coal Creek Limestone Member
 - Holt Shale Member
 - Dubois Limestone Member
 - Turner Creek Shale Member
 - Sheldon Limestone Member
 - Jones Point Shale Member
 - Curzon Limestone Member
 - Iowa Point Shale Member
 - Hartford Limestone Member

Calhoun Shale
Deer Creek Formation
 Ervine Creek Limestone Member
 Larsh-Burroak Shale Member
 Rock Bluff Limestone Member
 Oskaloosa Shale Member
 Ozawkie Limestone Member
Tecumseh Shale
 Rakes Creek Shale Member
 Ost Limestone Member
 Kenosha Shale Member
Lecompton Formation
 Avoca Limestone Member
 King Hill Shale Member
 Beil Limestone Member
 Queen Hill Shale Member
 Big Springs Limestone Member
 Doniphan Shale Member
 Spring Branch Limestone Member
Kanwaka Shale
 Stull Shale Member
 Clay Creek Limestone Member
 Jackson Park Shale Member
Oread Formation
 Kereford Limestone Member
 Heumader Shale Member
 Plattsouth Limestone Member
 Heebner Shale Member
Kasimovian Stage, Virgilian Stage
 Leavenworth Limestone Member
 Snyderville Shale Member
 Toronto Limestone Member
Douglas Group
 Lawrence Shale
 Wathena Shale Member
 Amazonia Limestone Member
 Pigeon Hill Shale Member
 Ireland sandstone facies
 Robbins shale facies
 Cass Formation
 Shoemaker Limestone Member
 Little Pawnee Shale Member
 Haskell Limestone Member
Kasimovian Stage, Missourian Stage
 Stranger Formation
 Vinland Shale Member
 Westphalia Limestone Member
 Tonganoxie Sandstone Member
 Sibley upper coal bed
 Iatan Limestone Member
 Weston Shale Member
 Lansing Group
 South Bend Formation
 Kitaki Limestone Member

Gretna Shale Member
Little Kaw Limestone Member
Rock Lake Shale
Stanton Formation
 Stoner Limestone Member
 Eudora Shale Member
 Captain Creek Limestone Member
Vilas Shale
Plattsburg Formation
 Spring Hill Limestone Member
 Hickory Creek Shale Member
 Merriam Limestone Member
Kansas City Group
Zarah Subgroup
 Lane Shale
 Bonner Springs Shale Member
 Farley Limestone Member
 Farley upper limestone facies
 Farley middle shale facies
 Farley lower limestone facies
 Island Creek Shale Member
Wyandotte Formation
 Argentine Limestone Member
 Quindaro Shale Member
 Frisbie Limestone Member
Liberty Memorial Shale
Iola Formation
 Raytown Limestone Member
 Muncie Creek Shale Member
 Paola Limestone Member
Linn Subgroup
 Chanute Shale
 Dewey Formation
 Cement City Limestone Member
 Quivira Shale Member
Nellie Bly Formation
 Belton sandstone
Cherryvale Formation
 Westerville Limestone Member
 Wea Shale Member
 Block Limestone Member
 Fontana Shale Member
Bronson Subgroup
Dennis Formation
 Winterset Limestone Member
 Stark Shale Member
 Canville Limestone Member
Galesburg Shale
Swope Formation
 Bethany Falls Limestone Member
 Hushpuckney Shale Member
 Middle Creek Limestone Member
Elm Branch Shale
Hertha Formation

Sniabar Limestone Member
Mound City Shale Member
Pleasanton Group
Shale Hill Formation
Guthrie Mountain Shale Member
Ovid coal bed
Critzer Limestone Member
Blue Mound Shale Member
Locust Creek coal beds
Knobtown Limestone Member
Weldon River Sandstone Member
Chariton conglomerate
Maney Shale Member
Exline Limestone Member

Upper? Middle? Pennsylvanian Series

Kasimovian? Moscovian? Stage, Desmoinesian Stage

Hepler Formation
unnamed shale member
Grain Valley coal bed
East Branch Sandstone Member
Marmaton Group
Holdenville Subgroup
Lost Branch Formation
unnamed shale member
Cooper Creek Limestone Member
unnamed shale member
Nuyaka Creek Shale Member
Sni Mills Limestone Member
Memorial Shale
unnamed shale member
Dawson coal bed
Perry Farm Shale Member
Idenbro limestone bed
Lenapah Formation
Norfleet Limestone Member
Nowata Shale
Walter Johnson Sandstone Member
Laredo coal bed
Appanoose Subgroup
Altamont Formation
Worland Limestone Member
Lake Neosho Shale Member
Amoret Limestone Member
Bandera Shale
Bandera Quarry Sandstone Member
Farlington limestone bed

Middle Pennsylvanian Series

Moscovian Stage, Desmoinesian Stage

Mulberry coal bed
Pawnee Formation
Coal City Limestone Member
Mine Creek Shale Member
Myrick Station Limestone Member
Anna Shale Member

Labette Shale
Lexington coal bed
Englevale Sandstone Member
Alvis coal bed
Labette lower sandstone
Fort Scott Subgroup
Higginsville Limestone
Little Osage Formation
Blackwater Creek Shale Member
Flint Hill sandstone facies
Houx Limestone Member
Binkley Shale Member
Morgan School Shale Member
Summit coal bed
Blackjack Creek Limestone
Blackjack Creek upper limestone member
Blackjack Creek middle limestone member
Blackjack Creek lower limestone member
Excello Shale
Cherokee Group
Cabaniss Subgroup
Mulky Formation
Mulky coal bed
Breezy Hill Limestone Member
Lagonda Formation
Squirrel sandstone facies
Bevier Formation
Bevier coal bed
Verdigis Formation
Wheeler Member
Wheeler coal bed
Ardmore Limestone Member
Oakley Shale Member
Mecca Quarry shale bed
Croweburg Formation
Croweburg coal bed
Fleming Formation
Fleming coal bed
Robinson Branch Formation
Robinson Branch coal bed
Mineral Formation
Mineral coal bed
Scammon Formation
Scammon coal bed
Chelsea Sandstone Member
Tiawah Limestone Member
Tebo Formation
Tebo coal bed
Weir Formation
Weir-Pittsburg upper coal bed
Weir-Pittsburg middle coal bed
Weir-Pittsburg lower coal bed
Krebs Subgroup
Welborn Formation

- Hackberry Branch Limestone Member
- Bluejacket Sandstone
 - Bluejacket coal bed
- Drywood Formation
 - Drywood coal bed
 - Drywood lower coal bed
- Rowe Formation
 - Rowe coal bed
- Warner Sandstone
 - Warner (Neutral) coal bed
- Hartshorne (?) Formation
- Riverton Shale

Moscovian Stage, Atokan Stage

- Riverton Shale
 - Riverton upper coal bed
 - Riverton middle coal bed
 - Riverton lower coal bed
- Ladden Branch Limestone Member

Lower Pennsylvanian Series

- Bashkirian Stage, Atokan Stage**
 - Burgner Formation
- Bashkirian Stage, Morrowan Stage**
 - McLouth Formation (subsurface only)
 - Hale Formation
 - Prairie Grove Member
 - Cheltenham Formation
 - Graydon Conglomerate

Mississippian Subsystem

Middle Mississippian Series

- Visean Stage, Chesterian Stage**
 - Vienna Limestone
 - Tar Springs Sandstone
 - Fayetteville Shale, Tar Springs Sandstone
 - Wedington Sandstone Member of Fayetteville Shale
 - Fayetteville Shale, Glen Dean Limestone
 - Fayetteville Shale, Hardinsburg Formation
 - Fayetteville Shale, Golconda Formation
 - Haney Limestone Member of Golconda Formation
 - Fraileys Shale Member of Golconda Formation
 - Hindsville Limestone, Batesville Sandstone, Golconda Formation
 - Beech Creek Limestone Member of Golconda Formation
 - Cypress Formation
 - Paint Creek Formation
 - Ridenhower Limestone Member
 - Bethel Member
 - Downeys Bluff Limestone Member
 - Yankeetown Sandstone
 - Renault Formation
 - Aux Vases Sandstone
 - Ste. Genevieve Limestone

Visean Stage, Meramecian Stage

- St. Louis Limestone

Salem Formation
Ritchey Formation, Upper Warsaw Formation

Visean Stage, Osagean Stage

Reeds Spring Fm., Bentonville Fm., Lower Warsaw Fm.
Short Creek Member of Bentonville Formation
Pierson Ls., Reeds Spring Fm., Bentonville Fm., Keokuk Ls.
Peerless Park Member of Keokuk Limestone

Lower Mississippian Series

Tournaisian Stage, Osagean Stage

Pierson Ls., Reeds Spring Fm., Bentonville Fm., Burlington Ls.
Pierson Ls., Reeds Spring Fm., Bentonville Fm., Burlington Ls., Fern Glen Fm.
Pierson Limestone, Fern Glen Formation
Meppen Limestone Member of Fern Glen Formation
Pierson Limestone

Tournaisian Stage, Kinderhookian Stage

Chouteau Group
McCraney Limestone, Northview Formation
Baird Mountain Limestone Member of Northview Formation
Chouteau Limestone, Sedalia Formation
Chouteau Limestone, unnamed formation
Chouteau Limestone, Compton Limestone
Hannibal Shale
Hannibal Shale, Bachelor Formation
Hannibal Shale
Horton Creek Limestone

Devonian System

Upper Devonian Series

Famennian Stage

Chattanooga Shale?, Louisiana Limestone
Chattanooga Shale?, Saverton Shale, Louisiana Limestone
Chattanooga Shale?, Saverton Shale, Sulphur Springs Group
Bushberg Sandstone of Sulphur Springs Group
Glen Park Limestone of Sulphur Springs Group
unnamed shale of Sulphur Springs Group
Chattanooga Shale, Saverton Shale, Holts Summit Sandstone
Chattanooga Sh., Saverton Sh., Holts Summit Sandstone, Maple Mill shale
Chattanooga Shale, Holts Summit Sandstone, Grassy Creek Shale
Sylamore Ss., Chattanooga Sh., Holts Summit Ss., Grassy Creek Sh., Turpin Ss.

Frasnian Stage

Sweetland Creek Shale
Snyder Creek Shale, Cedar Valley Limestone?
Cedar Valley Limestone

Middle Devonian Series

Givetian Stage

Cedar Valley Limestone
Cedar Valley Limestone, Fortune Formation, St. Laurent Limestone
Cedar Valley Limestone, St. Laurent Limestone
St. Laurent Limestone
St. Laurent Limestone, Beauvais Sandstone

Eifelian Stage
St. Laurent Limestone, Beauvais Sandstone
Grand Tower Limestone

Lower Devonian Series

Emsian Stage
Grand Tower Limestone
Clear Creek Chert
Little Saline Limestone

Pragian Stage?
Grassy Knob Chert
Lochkovian Stage?
Grassy Knob Chert
Bailey Formation

Silurian System

Pridoli Series
Bailey Formation
Bainbridge Formation
Moccasin Springs Member

Ludlow Series

Ludfordian Stage
Moccasin Springs Member
Gorstian Stage
Moccasin Springs Member

Wenlock Series

Homerian Stage
St. Clair Limestone Member
Sheinwoodian Stage
St. Clair Limestone Member
Seventy-Six Shale Member

Llandovery Series

Telychian Stage
Seventy-Six Shale Member
Sexton Creek Limestone
Aeronian Stage
Bowling Green Dolomite
Rhuddanian Stage
Bryant Knob Formation
Kissenger Limestone Member

Ordovician System

Upper Ordovician Series

Hirnantian Stage, Cincinnati Stage
Noix Limestone, Cyrene Limestone, Leemon Formation
Maquoketa Group
Girardeau Limestone
Maquoketa Shale
Orchard Creek Shale
Katian Stage, Cincinnati Stage
Orchard Creek Shale

Thebes Sandstone
Cape La Croix Shale
Cape Limestone, Kimmswick Limestone

Katian Stage, Mohawkian Stage

Kimmswick Limestone
House Springs K-bentonite bed

Decorah Group
Guttenberg Limestone
Kings Lake Limestone

Sandbian Stage, Mohawkian Stage

Kings Lake Limestone
Spechts Ferry Formation
Glencoe Shale Member
Millbrig K-bentonite bed
Castlewood Limestone Member
Deicke K-bentonite bed

Plattin Group
Macy Limestone
Zell Member
Hook Member
Hager Limestone
Victory Member
Hely Member
Glaize Creek Member
Beckett Limestone
Bloomsdale Limestone
Establishment Shale Member
Brickeys Member
Blomeyer Member

Pecatonica Formation
Oglesby Member
Medusa Member
Joachim Dolomite
Metz Member
Matson Member
Defiance Member
Boles Member

Sandbian Stage, Whiterockian Stage

Joachim Dolomite, St. Peter Sandstone
Augusta Member of Joachim Dol., Starved Rock Member of St. Peter Ss.
Abernathy Member of Joachim Dol., Starved Rock Member of St. Peter Ss.

Middle Ordovician Series

Darriwilian Stage, Whiterockian Stage

Dutchtown Formation, St. Peter Sandstone
Starved Rock Member of St. Peter Sandstone
Tonti Member of St. Peter Sandstone
Kress Member of St. Peter Sandstone
Everton Formation

Lower Ordovician Series, Ibexian Series

Floian Stage

Smithville Dolomite
Powell Dolomite

Cotter Dolomite
Swan Creek sandstone
Jefferson City Dolomite

Tremadocian Stage
Jefferson City Dolomite
Quarry Ledge
Roubidoux Formation
Gasconade Dolomite
Skullrockian Stage of Ibexian Series
Gasconade Dolomite
Gunter Sandstone Member

Cambrian System

upper Cambrian series, Ibexian Series

Skullrockian Stage of Ibexian Series
Gunter Sandstone Member, Potosi-Eminence Dolomite, Eminence Dolomite

upper Cambrian series, Millardan Series

Sunwaptan Stage
Potosi-Eminence Dolomite, Eminence Dolomite
Potosi-Eminence Dolomite, Potosi Dolomite
Dug Hill Fm.?, Taum Sauk ls. facies?, Potosi-Eminence Dol., Potosi Dol.
Dug Hill Fm., Taum Sauk ls. facies, Derby-Doerun Dol. of Elvins Group
Dug Hill Fm., Taum Sauk ls. facies, Derby-Doerun Dol. and Davis Fm. of Elvins Group

Steptoean Stage
Dug Hill Fm., Taum Sauk ls. facies, Derby-Doerun Dol. and Davis Fm. of Elvins Group
Dug Hill Fm., Taum Sauk ls. facies, Davis Fm. of Elvins Group
Dug Hill Formation, Taum Sauk limestone facies, Bonneterre Formation
Whetstone Creek Member of Bonneterre Formation
Sullivan Siltstone Member of Bonneterre Formation

middle Cambrian series, Lincolnian Series

Marjuman Stage
Sullivan Siltstone Member of Bonneterre Formation
Dug Hill Formation, Taum Sauk limestone facies, Bonneterre Formation,
Lamotte-Bonneterre transition beds, Lamotte-Dug Hill transition beds
Lamotte Sandstone

Proterozoic Eonothem (crystalline basement rock)

St. Francois Mountains Volcanic Supergroup

Taum Sauk Group
Cope Hollow Formation
Johnson Shut-Ins Rhyolite
Proffit Mountain Formation
Taum Sauk Rhyolite
Royal Gorge Rhyolite
Bell Mountain Rhyolite
Wildcat Mountain Rhyolite
Russell Mountain Rhyolite
Lindsey Mountain Rhyolite
Ironton Rhyolite
Buck Mountain Shut-Ins Formation
Pond Ridge Rhyolite
Cedar Bluff Rhyolite

Shepherd Mountain Rhyolite
Butler Hill Group
Ironton Hollow Rhyolite
Wolf Mountain Ignimbrite
Tribby Breccia
Iron Mountain Lake ignimbrite
Grassy Mountain Ignimbrite
Lake Killarney Formation
unassigned volcanic units
Little Creek formation
Glover formation
Ketcherside Mountain ignimbrite
Buford Mountain Rhyolite
Buford Mountain trachyandesite
Iron Mountain Lake rhyolite
Mudlick dellenite
St. Francois Mountains Intrusive Suite
hypabyssal rocks
Buford Granite Porphyry
Munger Granite Porphyry
Carver Creek Granite Porphyry
Brown Mountain Rhyolite Porphyry
plutonic rocks
Graniteville Granite
Silvermine Granite
Knoblick Granite
Slabtown Granite
Stono Granite
Butler Hill Granite
Breadtray Granite

ALPHABETICAL LISTING OF NOMENCLATURE

A

Aarde Shale Member	4
Abernathy Member	12
Ackerman Formation	3
Aeronian Stage	11
Alluvium	3
Altamont Formation	7
Alvis coal bed	8
Amazonia Limestone Member	5
Amoret Limestone Member	7
Anna Shale Member	7
Appanoose Subgroup	7
Ardmore Limestone Member	8
Argentine Limestone Member	6
Atlanta Formation	3
Atokan Stage	9
Auburn Shale	4
Augusta Member	12
Aux Vases Sandstone	9
Avoca Limestone Member	5

B

Bachelor Formation	10
Bailey Formation	11
Bainbridge Formation	11
Baird Mountain Limestone Member	10
Bandera Shale	7
Bandera Quarry Sandstone Member	7
Bashkirian Stage	9
Batesville Sandstone	9
Beauvais Sandstone	10, 11
Beckett Limestone	12
Beech Creek Limestone Member	9
Beil Limestone Member	5
Bell Mountain Rhyolite	13
Belton sandstone	6
Bentonville Formation	10
Bern Formation	4
Bethany Falls Limestone Member	6
Bethel Member	9
Bevier coal bed	8
Bevier Formation	8
Big Springs Limestone Member	5
Binkley Shale Member	8
Blackjack Creek Limestone	8
Blackjack Creek lower limestone member.....	8
Blackjack Creek middle limestone member.....	8

Blackjack Creek upper limestone member.....	8
Blackwater Creek Shale Member	8
Block Limestone Member	6
Blomeyer Member	12
Bloomsdale Limestone	12
Blue Mound Shale Member	7
Bluejacket coal bed	9
Bluejacket Sandstone	9
Boles Member	12
Bonner Springs Shale Member	6
Bonneterre Formation	13
Bowling Green Dolomite	11
Breadtray Granite	14
Breezy Hill Limestone Member	8
Brickeys Member	12
Bronson Subgroup	6
Brown Mountain Rhyolite Porphyry	14
Bryant Knob Formation	11
Buck Mountain Shut-Ins Formation	13
Buford Granite Porphyry	14
Buford Mountain Rhyolite	14
Buford Mountain trachyandesite.....	14
Burgner Formation	9
Burlingame Limestone Member	4
Burlington Limestone	10
Bushberg Sandstone	10
Butler Hill Granite	14
Butler Hill Group	14

C

Cabaniss Subgroup	8
Calhoun Shale	5
Cambrian System	13
Campanian Stage	3
Canville Limestone Member	6
Cape La Croix Shale	12
Cape Limestone	12
Captain Creek Limestone Member	6
Carboniferous System	3
Carver Creek Granite Porphyry	14
Cass Formation	5
Castlewood Limestone Member	12
Cedar Bluff Rhyolite	13
Cedar Vale Shale Member	4
Cedar Valley Limestone	10
Cement City Limestone Member	6
Cenozoic Erathem	3
Chanute Shale	6
Chariton conglomerate	7
Chattanooga Shale	10

Chelsea Sandstone Member	8
Cheltenham Formation	9
Cherokee Group	8
Cherryvale Formation	6
Chesterian Stage	9
Chouteau Group	10
Chouteau Limestone	10
Church Limestone Member	4
Cincinnatian Stage	11
Clay Creek Limestone Member	5
Clayton Formation	3
Clear Creek Chert	11
Coal City Limestone Member	7
Coal Creek Limestone Member	4
Coffee Sand	3
Columbia Member	3
Compton Limestone	10
Cooper Creek Limestone Member	7
Cope Hollow Formation	13
Cotter Dolomite	13
Cretaceous System	3
Critzer Limestone Member	7
Croweburg coal bed	8
Croweburg Formation	8
Crowley's Ridge Silt	3
Curzon Limestone Member	4
Cypress Formation	9
Cyrene Limestone	11

D

Darriwilian Stage	12
Davis Formation	13
Dawson coal bed	7
Decorah Group	12
Deer Creek Formation	5
Defiance Member	12
Deicke K-bentonite bed	12
Dennis Formation	6
Derby-Doerun Dolomite	13
Desmoinesian Stage	7
Devonian System	10
Dewey Formation	6
Doniphan Shale Member	5
Douglas Group	5
Dover Limestone Member	4
Downeys Bluff Limestone Member	9
Dry Shale Member	4
Drywood coal bed	9
Drywood Formation	9

Drywood lower coal bed	9
Dubois Limestone Member	4
Dug Hill Formation	13
Dutchtown Formation	12

E

East Branch Sandstone Member	7
Eifelian Stage	11
Elm Branch Shale	6
Elmo coal bed	4
Elmont Limestone Member	4
Elvins Group	13
Eminence Dolomite	13
Emporia Formation	4
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